DOCUMENT RESUME

ED 262 829 JC 850 457

AUTHOR Doty, Charles R.
TITLE Technical Upgrading.
SPONS AGENCY American Vocational Association, Inc., Arlington, Va.
PUB DATE [85]
NOTE 23p.
PUB TYPE Information Analyses (070) -- Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Community Colleges; *Faculty Development; Literature Reviews; *Professional Development; Program Descriptions; Program Development; *Retraining; *Teacher Improvement; *Technological Advancement; Two Year Colleges; *Vocational Education

ABSTRACT

Designed for staff development personnel, this paper reviews information and resources on technical upgrading for vocational education faculty, and offers recommendations for the implementation of a staff development program. The paper offers an update on materials published between 1982 and 1984, highlighting a major survey of staff development practices, and a national investigation of technical upgrading of vocational educators. "Principles and Sources for a Model for Technical Upgrading in Community Colleges," an article by Charles R. Doty and Frank Cappelle, is also presented. This report reviews literature on research and development efforts in the field of technical upgrading, types of staff development programs and activities, and the consortia and associations active in the field. In addition, the report offers a series of guidelines for technical upgrading, focusing on obtaining funding; cooperating with business, industry, and labor; gaining commitment to the effort by administrators and faculty; implementing the technical upgrading program; determining the responsibilities of the institutional staff development officer; and ensuring that the needs of the individual faculty member are met. Finally, concluding comments underscore the importance of technical upgrading to the survival of institutions, programs, and individuals. (EJV)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

C. R. DOTY

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.
☒ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED262829

TECHNICAL UPGRADING

By

Charles R. Doty*

Alfred and Nash (1984) state, "An emerging problem in public community colleges is the need to restrain or revitalize faculty in career programs to improve the performance of the institution in relation to changing economic conditions, shifting labor market needs, and rapid advances in technology (p. 5)." Actually, technical upgrading has been a problem since the first technical curriculum was initiated in any private or public educational institution.

Technical upgrading has been a major convention theme for several years. In 1980 the Technical Education Division of the American Vocational Association asked the writer to summarize the efforts being made throughout the nation. This request resulted in the article by Doty and Cappelle (1982) which is reprinted following this introduction to technical upgrading.

Smith (1980) was also investigating staff development practices in U.S. community colleges. The abstract of the report gives a clear description of his efforts.

> A nationwide survey of 1,315 community colleges was conducted in 1979 to draw a profile of the colleges' staff development practices. A 12-page survey instrument asked respondents to: (1) identify the goals of the staff development program; (2) estimate the effectiveness of the instructional methods used in

JC 850 457

*Charles R. Doty, Ph.D., is Adviser in Technical Education, Graduate School of Education, Rutgers - The State University of New Jersey.

> these programs, as well as the methods used to evaluate instructor performance; (3) estimate the effectiveness of staff development practices used by the college, such as sabbatical leaves and travel grants; (4) indicate the participation of various faculty and staff groups in staff development acivities; (5) identify the sources of program funding; (6) describe the organizational structure of staff development programs; and (7) indicate the criteria used to evaluate these programs and the degree to which these criteria had been set. Selected findings indicate that, of the 687 responding colleges, 413 had organized staff development programs. The most frequently mentioned program goals centered on the development of faculty, rather than non-teaching staff, and the availability of travel funds was rated the most effective staff development activity. Only 25% of the colleges had completed a full evaluation of their staff development programs, and few were able to report that evaluation criteria had been set. The survey report details and compares findings, where possible, with those of a similar 1976 study. (JP)

In 1981 the National Center for Research in Vocational Education began an investigation of technical upgrading of secondary and post-secondary vocational and technical educators. Four major reports resulted from this investigation, i.e., Hamilton, et al., (1982) completed a status report, Wonacott and Hamilton (1983) completed a national survey and review of the literature to identify programs and practices, Wonacott and Hamilton (1983) examined the approaches to technological updating in depth, and Hamilton and Wonacott (1984) produced the capstone report for a strategy for action. The content of the capstone report is given in the Executive Summary:

> This document reports a strategy for updating secondary and postsecondary vocational teachers in the technologies of their teaching areas. The strategy consists of nine generic characteristics identified as

essential to the success of programs designed to update teachers. As such, the strategy maximizes known update program facilitators and minimizes known program barriers. Development of the strategy was deemed necessary because of the persistent lack of success of many efforts to provide technological update to vocational teachers, in spite of a well known repertoire of appropriate techniques available (p. vii).

References
update to August 1984

Alfred, R. L. and Nash, N. S. Faculty Retraining: A Strategy Response to Changing Resources and Technology. Community College Review, II, 2, Fall 1983. Reprinted in Newsletter: Council for Occupational Education, VIII, 3, Spring 1984, pp. 5-7.

Doty, C. R. and Cappelle, F. Technical Updating in Community Colleges, Journal of Studies in Technical Careers, IV, 4, Fall 1982, pp. 361-372.

Hamilton, J. B. and Wonacott, M. E., and Simandjuntak, A. Technological Update of Vocational/Technical Teachers: A Status Report. Columbus, Ohio: National Center for Research in Vocational Education, 1982. (ED 229592)

Hamilton, J. B. and Wonacott, M. E. Updating Teachers for Tomorrow's Technology: A Strategy for Action. Columbus, Ohio: National Center for Research in Vocational Education, 1984 (ED 242863)

Smith, A. B. Staff Development Practices in U.S. Community Colleges. Washington, D. C.: American Association of Community and Junior Colleges, 1980. (ED 200285)

Wonacott, M. E. and Hamilton, J. B. Approaches to Technological Update of Vocational Technical Teachers. Columbus, Ohio: National Center for Research in Vocational Education, 1983. (ED 229572)

Wonacott, M. E. and Hamilton, J. B. Updating Teachers for Tomorrow's Technology: Programs & Practices. Columbus, Ohio: National Center for Research in Vocational Education, 1983. (ED 232013)

PRINCIPLES AND SOURCES FOR A MODEL FOR TECHNICAL UPGRADING IN COMMUNITY COLLEGES

Charles R. Doty
Rutgers University

Frank Cappelle
Rutgers University

In 1976 a national conference was conducted concerning postsecondary staff development (Doty and Gepner (Eds.), 1976). George Storm, Ferris State College, Michigan, was given the task of describing the "state of the art" of inservice technical upgrading of postsecondary technical instructors for that conference. It was found to be the most ignored area of staff development. An ERIC computer search revealed only three sources. With the exception of the Beasley and Smiley (1971) publication, these sources were of little use. Storm (1976), however, surveyed via telephone almost every state and produced a comprehensive report. In his opening paragraph of that report he summarized the situation:

> As we view the existing pattern of technical upgrading programs for postseconary vocational-technical instructors, we can't help but look with awe at the wide varierty of professional improvement opportunities that exist in most occupational fields. The opportunities are there, but they are not being utilized to their best advantage (p. 237).

Charles R. Doty is Adviser in Technical Education, Rutgers-The State University of New Jersey, New Brunswick, NJ.

Frank Cappelle is a doctoral student, Department of Vocational-Technical Education, Rutgers-The State University of New Jersey.

By October 1981 a search of the literature revealed more attention to technical upgrading, although not what one might expect for such an important problem. The problem was emphasized in the Technical Insider (May 1981) concerning staff development and the technical educator:

> The ever-intensifying need for staff development, coupled with reductions in spending for development, call for creativity in keeping faculty members productive and up to date in their technical specialties (p. 30a).

McLean (1979) in explaining the purpose of the National Association of College Automotive Teachers wrote:

> Who will train the mechanics to service these new vehicles? You know the answer.
>
> The manufacturers will continue to make technical literature available and provide free training for automotive teachers at company centers. Textbook publishers will continue to issue revised editions. But much of the task of getting up to date and staying there will necessarily devolve upon the individual instructor (p. 15).

Quoting from the article Revitalization for technical educators:

> How can a technical educator best keep abreast of current technological changes and advances? How does a teacher of a specific technology keep current in his or her respective field while at the same time maintaining a responsible, accountable posture in the classroom (1980, p. 7)?

The answer to these questions is found in the Return to Industry Policies and Procedures Manual of Spartanburg Technical College. "It is impossible to maintain a regular teaching load and to gain realistic knowledge of the day-to-day working world at the same time" (undated, p. 1).

Nelson (1977) asked a vital question and then answered it. "Won't faculty development soon be a topic of the past, as in typical American fashion we turn our attention to something new in

the next decade? Hardly! Faculty development will be more important than ever in the 1980s" (p. 143).

This paper, in response to the need for technical upgrading staff development programs, has been prepared to give the person involved in staff development or preparing a staff development program, information on research and development, types of programs/activities, consortiums and associations, principles for technical upgrading, and recommendations.

Research and Development

Kline (1981) developed a model return-to-industry program for instructors at two-year postsecondary institutions for her doctoral dissertation. The model involved five stages through which both the instructor and the business/industry progress. These steps were: (1) awareness, (2) committment, (3) preparation, (4) participation, and (5) impact.

Warmbrod, Persavich, and Angelle (1981) produced Sharing Resources: Postsecondary Education and Industry Cooperation. Within this publication are descriptions of 219 exemplary programs and practices of postsecondary occupational education and industry collaboration across the county. Forty-eight programs were descibed in detail, i.e., implementation, procedures, contributions by the colleges, benefits to the industries, benefits to the colleges, and elements for success. Of particular interest is their identification and description of four model exemplary faculty "return to industry" programs. These programs are Orangeburg-Calhoun Technical College, Orangeburg, South Carolina; Hagertown

Junior College, Hagertown, Maryland; Spartanburg Technical College, Spartanburg, South Carolina; and Central Piedmont Community College, Charlotte, North Carolina.

Anderson (1979) administered the Teacher In-Service Preference Questionnaire to 440 instructors. Ninety-four persons with 0-4 years teaching experience, and ninety-eight persons with 20+ years of experience replied. He found that the least experienced instructors preferred workshops and demonstrations the most, and conferences, institutes, and conventions the least. Experienced instructors preferred workshops and institutes the most while rating conferences and demonstrations the least. A conclusion from this study was that workshops emphasizing demonstrations are the preference of lesser experienced teachers. Workshops and institutes where information is exchanged more verbally were preferred by more experienced instructors. Workshops were preferred most by both groups of instructors.

Dieffenderfer, Kopp, and Cap (1977) produced eight resource handbooks for improving linkages with business, industry, and labor. The eight topics featured were staff development, advisory committees, cooperative internships, personnel exchange programs, workshops, site visits, resource persons, and program support. Included within these publications was an analysis of the approaches to staff development, i.e., staff, committee, administrator, and individual. A planning sequence for developing the programs was also included.

Kolendrianos (1977) investigated the inservice education activities and opinions of full-time occupational instructors in the Virginia Community College System. He studied the needs for inservice education of the instructors as perceived by deans of instruction and occupational-technical division chairpersons. A mail survey was sent to a random sample of 120 full-time instuctors and all of the administrators. The result showed the most widely used inservice education activities were reading occupational and professional journals, meeting other instructors formally and informally, meeting with sales persons in the occupational speciality area, and formal staff meetings. The least utilized activities were meeting with consultants, attending state-level professional education association meetings, and meeting with instructors for four-year colleges for accomplishing program development and articulation. Kolendrianos reported the three most popular opinions of instructors in regard to inservice needs were that the instructor should have a selection of activities that will strengthen professional competence, that special orientation activities for new staff be provided, and that credit be given for participation in inservice activities. In addition, the main point expressed by instructors and administrators was that focus be given to new developments in one's specialty, preparing instructional materials, and techniques to maintain student retention.

Storm (1976) conducted a nationwide survey that indicated widespread and nearly unanimous interest in technical upgrading of postsecondary professional personnel. He reported that, in spite of this positive interest, few postsecondary institutions have

inservice programs that satisfactorily serve the technical upgrading needs of their respective instructors and administrators. He also reported that postsecondary institutions in almost 50 percent of the states were exempt from teacher certification requirements; and even in states where they were applicable, the requirements were frequently fulfilled through advanced education, administration or supervision courses and workshops which did not fulfill the objective of technical upgrading. Storm's study was used to examine the problem of balance between pedagogical and technical skills (in Doty, Tornell, and Wenzel, 1980; Storm 1978).

Kotula (1976) wrote the group report on inservice personnel education for the National Conference on Personnel Development for Postsecondary Vocational and Technical Education Programs. The study group identified five priorities for establishing programs: (1) needs assessment, scope and setting goals; (2) establishing an administrative organization; (3) developing an annual program and establishing a schedule, workload, and time for inservice education; (4) establishing climate, credibility, and motivating staff; and (5) identifying resources (funding, personnel) for the programs. Questions for each priority were stated which must be answered. Short- and long-term improvements expected from the programs were stated. Personnel development objectives at national, state, and local levels were identified. Motivational techniques to ensure staff participation were recommended.

Doty and Gepner (1976) prepared a two-volume reference source for the United States Office of Education in response to a national problem of personnel development for postsecondary vocational and

technical education programs of less-than-baccalaureate degree. The national survey attempted to locate continuous, quality staff development programs offered at community colleges and technical institutes. Forty-five program experts produced review and synthesis papers on preservice and inservice faculty development, administration, adjunct faculty, teaching strategies, technical upgrading, non-traditional students, and/or descriptions of their programs. Comprehensive annotated bibliographies were included on the topics previously mentioned, and the national conference structure and evaluation were given. Their basic finding was that technical teachers would participate in teacher education activities if there was administrative support and if there was some reward for such participation. Technical teachers prefer and participate in those activities which improve their technical competence rather than activities to improve teaching competence, even though their supervisors may regard teaching competencies as equally important as technical competency and encourage the technical teachers to improve their teaching abilities (Doty, et. al., 1980).

Bloom (1974) studied occupational teachers' participation in professional growth activities in the Illinois community colleges. A stratified random sample of 375 teachers produced a 77.6% return. Bloom reported the most widely used activities were reading occupational and professional education journals, meeting with other occupational instructors formally and informally, observing employees in their occupational area, and formal staff meeting. Inservice activities least used were both long- and short-term institutes or workshops, national association meetings and

research. Bloom, found that six hours of work per week, the number of years of work experience, size of campus, distance from a college or university, age, or recency of a teacher's participation in preservice education made no difference in occupational teachers participation in professional growth activities. On the other hand, the higher the level of education, the more years of teaching experience, and the teacher's perception that administration supports inservice education did influence teachers to participate.

Kruk (1974) based his study on the perceptions of junior college technical education teachers and their supervisors. His survey yielded returns from 189 teachers and 56 supervisors from 20 colleges in Florida. The opinions expressed showed that both the teachers and supervisors were willing to participate in inservice activities, either as students or as instructors to share their expertise. Their opinions were directly related to the fact that they had recently participated in such activities. A major finding was that there was a more pronounced dissatisfaction with present professional and technical inservice education practices by teachers than by supervisors.

Types of Staff Development Programs/Activities

Storm (1976) in his "state of the art" for inservice technical upgrading of postsecondary personnel defined five categories of programs:

1. Workshops at Technical Education Institutions
2. Industry and Business Sponsored Workshops
3. Workshops Sponsored by Technical Societies and Labor Organizations
4. State Department of Education Sponsored Workshops
5. Work Experience Programs in Business and Industry (p. 238)

A review of the literature by the author revealed the following means for technical upgrading. These are listed as an aid for the person seeking:

Advisory Committees
Conferences
Consultants to instructors
Conventions
Cooperative internships
Correspondence courses
Courses/workshops
Demonstrations
Faculty residencies
Fellowships
Industrial/Business courses & workshops
Industry-education exchange program
Institutes
Leaves of absence
Mini sabbaticals
Personnel exchange programs
Professional days
Reading technical journals
Return to industry
Sabbaticals
Salespersons
Seminars
Short term leaves
Summer institutes
Technical society courses/workshops
Time built into term schedule
Visits to business and industry
Instructors consulting

Consortium and Associations

The AACTion Consortium, funded under the Strengthening Developing Progams, Title III, of the Higher Education Act of 1965, was established July 1, 1975. Four regional centers provide technical assistance in four activities: (a) continuing and community education; (b) instruction; (c) resource development; and (d) student development. Technical assistance is provided in various forms, i.e., AACTion staff on-campus consultations, thematic-workshops, specialist training, information services, newsletters, internships, and model program evaluations. One hundred four institutions nationwide participate in the Consortium.

The National Council for Staff, Program, and Development is an affiliate council of the American Association of Community and Junior Colleges. Four regional representatives are designated, Northeastern, Midwestern, Southern, and Western, to provide

communication and service to members. Regional meetings are conducted to upgrade staff development officers and other interested persons.

The Council for Occupational Education, an affiliate of the American Association of Community and Junior Colleges, has the purpose of exchanging information among its members. Membership in the Council provides a subscription to the Journal of Studies in Technical Careers, whose theme is "Where Education and Industry Meet."

The National Association of Industrial and Technical Teacher Educators (NAITTE) is a private, non-profit professional organization affiliated with the American Vocational Association. NAITTE includes teacher educators and staff development officers in the fields of industrial arts, technical education, and trade and industrial, and vocational education. The Association produces the Journal of Industrial Teacher Education, sponsors programs at the AVA national convention, plus disseminating information on crucial issues and problems.

The National Association of Instructional Leaders in Technical Education (NAILTE), approved by the AVA December 1978, has as its purpose the upgrading of communication among technical educators and increasing the professional competencies of its members.

Guidelines for Technical Upgrading

The following guidelines pertaining to funding, business/industry/labor, commitment, technical upgrading program, institutional staff development officer, and individual faculty member were identified by the author while serving as a technical teacher

educator, consulting and reviewing the literature during the last eleven years. Where specific guidelines were obtained from the literature or persons, documentation is given.

Funding

Three percent (3%) of the institution's total budget should be spent on staff development and curriculum development (Kotula, 1981).

Participants involved in such programs as "return to industry" or sabbaticals should be paid full salary and regular benefits. Inflation has reduced or eliminated the ability of individuals to support themselves financially when participating in inservice programs.

Expenses, e.g., tuition and travel, should be paid by the educational institution.

Start-up funding might be obtained via P.L. 89-329, Higher Education Act of 1965, Title III - Strengthening Developing Institutions.

Business/Industry/Labor

Business, industry and labor must be convinced this program is not a recruitment strategy for employees.

A signed agreement among the institution, instructor, industry, and union must be accomplished prior to the instructor engaging in technical upgrading that involves the instructor returning to industry. The agreement must specify the duration of the program, financial agreement, insurance, instructor committment to return to the college for a specified time, and a listing of the objectives which the instructor plans to achieve.

Union requirements must be satisfied.

Business/industry/labor must be oriented concerning the goals of the educational institution and the staff development program.

Personnel from business, industry, and labor should be used to assist the instructor in analyzing, (1) what is required on the job, i.e., task analysis, Develop Curriculum (DACUM), and (2) what areas the instructor needs upgrading. The instructor cannot do this job analysis and self-analysis alone.

Commitment

The board of trustees, president, and other administrators should publicly proclaim their commitment to faculty development.

A policy manual should be written and approved that identifies the benefits to the individual as a result of participation in faculty upgrading in terms of promotion, rank, salary, work load, tenure, and professional recognition.

Once started the program must be continuous.

Faculty must be involved in approval, planning, implementing, and evaluating the program.

Technical Upgrading Program

The program should not be used for reward and punishment. That is, those persons who succumb to or support administrative policy and procedures receive support for inservice activities and those who act otherwise are denied inservice education. The goal of inservice education is to provide equal opportunity for all persons.

Begin the program with volunteers.

The program should be for all faculty in the institution, not just technical faculty. A separate program for technical faculty

will cause interinstitutional conflicts among the different faculty groups.

A balance should be achieved between individual upgrading activities and college-wide activities to prevent compartmentalization. That is, the faculty member must be educated in his/her total responsiblity to institutional needs (Nelson, 1979).

The program should be evaluated at least in the areas of change in curricula, student progress, and teacher morale and retention.

A justification paper might be prepared which could be used to determine allocation of institutional resources.

Institutional Staff Development Officer

An institutional staff development officer should be appointed whose main responsibility is staff development.

The officer should not be assigned other responsibilities which cause staff development to be a second priority.

The staff development office should not be used as a position to place a staff member displaced from his/her regular job - unless that person believes in staff development and is competent to fulfill the reponsibility of the position.

A person evaluating personnel for promotion, tenure, salary, etc., should not be assigned the position of staff development officer.

The staff development officer should never report a faculty member's progress to those responsible for evaluation. The staff development officer's role is to assist the faculty member in overcoming any deficiencies revealed in the evaluation process.

Individual Faculty Member

The program should be based upon an assessment of individual faculty member's needs.

Offer what the individual prefers first.

Research, previously cited in this article, indicates that individuals are hesitant to participate in inservice activities until the administration officially endorses the program and identifies benefits to be obtained by the institution and the faculty member. Therefore, the administration should have an approved policy concerning inservice education.

Asking a faculty member what is needed may not be sufficient. The individual will need help in assessing where he/she is and where he/she needs to be.

Do not expect a faculty member who has become involved in technical upgrading to be satisfied with outdated equipment.

A person who is not regularly scheduled for upgrading may become insecure and may use the program eventually for becoming updated and leaving education.

Personnel from business, industry, and labor who are to be involved in industry-education programs must have clear policy statements concerning their leave of absence, job seniority, wages, and fringe benefits.

Summary

With the increasing rate of technological change and a decrease in the number of new instructors in community colleges due to tenure and reduced job mobility, full commitment to implementing and continuing technical upgrading must be an institutional priority. Technical upgrading is essential to the survival of institutions, programs, and individuals.

Persons planning or involved in a staff development program, particularly technical upgrading, should examine the publications of Dieffenderfer, et al. (1977), Kline (1981), and Doty and Gepner(1976). The four colleges with model "return to industry" programs cited by Warmbrod, et al. (1981), should be contacted for examples of policy statements, procedures, and contracts. Other institutions such as Delaware Technical and Community College, State Technical Institute and Community College, and State Technical Institute at Memphis might be contacted.

In order to keep up on available material and ideas, membership in the AACTion Consortium, the National Council for Staff, Program and Organization, the Council for Occupational Education, the National Association of Industrial and Technical Teacher Educators, and the National Association of Instructional Leaders in Technical Education seems highly desirable.

References

AACTion Consortium. (Eastern Regional AACTion Center, Tri-County Technical College, Pendleton, SC.)

Adams, R. E. DACUM: An Approach to Curriculum, Learning, and Evaluation in Occupational Training. Ottawa, Canada: Global Printing & Lithographing (Toronto) Limited, 1975.

American Vocational Education Personnel Development Association. (Contact Carl Blank, Secretary-Treasurer, Division of Vocational Education, State Department of Education, 233 South 10th Street, Lincoln, NB 68505.

Anderson, R. L. Inservice Education Preference of Educators. Alberta, Canada: National Conference of Professors of Educational Administration, August 1979. (ED 177 690)

Beasley, G. and Smiley, J. Occupational Experience for Vocational Education Teachers: A Handbook for Teacher Educators. Columbus, Ohio: National Center for Research in Vocational Education, 1971.

Bloom, T. K. A Descriptive Analysis of Current In-service Practice of Occupational Instructors in the Illinois Community Colleges. Ph.D. dissertation, Urbana-Champaign: University of Illinois, 1974. (71-12269)

Dieffenderfer, R. A., Kopp, L., and Cap, O. Business-Industry-Labor Linkages: A Handbook for Improving Personnel Development Programs, Handbook Section 1. "Staff Development: Creating a Staff Development for Business, Industry, Labor Involvement." Columbus, Ohio: National Center for Research in Vocational Education, June 1977. (ED 150 434)

Dieffenderfer, R. A., Kopp, L., and Cap, O. Business-Industry-Labor Linkages: A Handbook for Improving Personnel Development Programs, Handbook Section 4, "Personnel Exchange Programs." Columbus, Ohio: National Center for Research in Vocational Education, June 1977. (ED 150 437)

Doty, C. R. and Gepner, R. (Eds.) Post-Secondary Personnel Development, Vol. 1. Trenton, NJ: Mercer County Community College, June 30, 1976. (Ed 131 891; related document, Ed 131 892)

Doty, C. R., Tornell, H. R., and Wenzel, W. Review and Synthesis of Research and Development in Technical Education. Columbus, Ohio: The National Center for Research in Vocational Education, 1980. (ED 193 566)

ERAC NEWS. (Contact Eastern Regional ACCTion Center, Tri-County Technical College, P.O. Box 587, Pendleton, SC 29670.)

Higher Education Act of 1965 (P.L. 89-329), Part III, Higher Education Programs, Title III, Strengthening Developing Institutions.

Easom, K. O. Local Educational Assessment Program: Institutional, Program, and Staff Development. Athens, GA: Athens Area Vocational-Technical School, June 1987. (ED 155 397)

Industrial Leave Program. (Contact State Technical Institute at Memphis, TN 38234, Attention: Educational Services.)

Kline, B. H. A Case Study of a Return-to-Industry Program: An In-service Approach for Vocational Instructors at a Two-Year Postsecondary Institution. Ph. D. dissertation, Blacksburg: Virginia Polytechnic Institute and State University, 1981.

Kolendrianoc, H. T. Analysis of Current In-Service Education Practices of Full-Time Occupational-Technical Instructors in the Virginia Community College System. Ph.D. dissertation, Blacksburg: Virginia Polytechnic Institute and State University, 1977.

Kotula, J. R. "In-Service Personnel Education Group Report." In Charles R. Doty and Ronald Gepner (Eds.), Post-Secondary Personnel Development. Vol. 1, June 30, 1976. (Ed 131 891)

Kruk, L. B., Jr. A Study of Florida Public Junior College Technical Educators' Perceptions of Selected Professional and Technical In-Service Education Activities. Ed.D. dissertation, Philadelphia, PA: Temple University, 1974. (75-28123)

McLean, W. D. NACAT-The Professional Organization for Automotive Instructors. Technical Education News. March-April 1979, 38 (3) 15.

National Association of Instructional Leaders in Technical Education (An affiliate of the American Vocational Association, 2020 N. 14th Street, Arlington, VA 22201).

National Council for Staff, Program, and Organizational Development (An affiliate council of the American Association of Community and Junior Colleges. Contact Dr. Maureen Luckenbill, Miami-Dade Community College, South Campus, Miami, FL 33176).

Nelson, W. C. Faculty Development: Prospects and Potential for the 1980s/ Liberal Education, Summer 1979, 65, 141-149.

Parsons, M. H. The Salt Mines Revisited: Two Years of Faculty Returning to Industry. Paper commissioned for the National Council for Staff, Programs, and Organizational Development, Northeastern Skill-building Workshop, Cherry Hill, NJ, November 29, 1979. (ED 180 547)

Return to Industry Program. (Contact Jane Reece, Spartanburg Technical College, P.O. Box 4386, Spartanburg, SC 29303, Phone: 803 576-5778.)

Revitalization for Technical Educators. Training and Development Journal, August 1980, 34 (8), 7.

Staff Development and the Technical Educator. In Technical Insider, Journal of the American Vocational Association, May 1981, 56 (4), 30a-30h.

Staff Development Program. (Contact G. T. Ravel, Director of Development, Delaware Technical and Community College, Dover, DE.)

Steckel, F. R. The EIA Service Technicians Development Programs. Technical Education News, October-November 1981, 41 (1), 16.

Storm, G. "State of the Art" In-service Technical Upgrading of Post-secondary Vocational-Technical Instructors. In Charles R. Doty and Ronald Gepner (eds.), Post-secondary Personnel Development, Vol 1, June 30, 1976, 237-266. (ED 131 891)

Storm G. The Scope of Technical Upgrading--Technical Upgrading of Occupational Instructors. American Technical Education Association, Inc. Journal, January-February 1978, (4), 10-12.

Warmbrod, C. P. and Cap, O. Business-Industry-Labor Inputs in Vocational Education Personnel Development. Columbus, Ohio: Ohio State University, June 1978. (ED 159 350)

Warmbrod, C. P., Peravich, J. J., and L'Angelle, D. Sharing Resources: Post-secondary Education and Industrial Cooperation. Columbus, Ohio: The National Center for Research in Vocational Education, 1981.

ERIC CLEARINGHOUSE
FOR JUNIOR COLLEGES

DEC 20 1985